

=====

Sequence Listing could not be accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2008; month=8; day=4; hr=13; min=20; sec=52; ms=3; ]

=====

\*\*\*\*\*

Reviewer Comments:

<210> 1

<211> 217

<212> DNA

<213> Saccharomyces cerevisiae complete genome

The above <213> response is invalid, per 1.823 of the Sequence Rules. The only valid responses are: the Genus species (Genus species only-- move other words to the <220>-<223> section. This error appears in many subsequent sequences.

<210> 20

<211> 36

<212> DNA

<213> Sequence Recognized by Synthetic DNA Binding Protein

The above <213> response is invalid, per 1.823 of the Sequence Rules. Please refer to error explanation above for valid <213> responses. Same type of error in Sequences 23, 26-27, 30-34.

\*\*\*\*\*

Application No: 10609383 Version No: 5.0

**Input Set:****Output Set:**

**Started:** 2008-08-04 11:53:26.021  
**Finished:** 2008-08-04 11:53:28.365  
**Elapsed:** 0 hr(s) 0 min(s) 2 sec(s) 344 ms  
**Total Warnings:** 34  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 34  
**Actual SeqID Count:** 34

| Error code | Error Description                                |
|------------|--|
| W 402      | Undefined organism found in <213> in SEQ ID (1)  |
| W 402      | Undefined organism found in <213> in SEQ ID (2)  |
| W 402      | Undefined organism found in <213> in SEQ ID (3)  |
| W 402      | Undefined organism found in <213> in SEQ ID (4)  |
| W 402      | Undefined organism found in <213> in SEQ ID (5)  |
| W 402      | Undefined organism found in <213> in SEQ ID (6)  |
| W 402      | Undefined organism found in <213> in SEQ ID (7)  |
| W 402      | Undefined organism found in <213> in SEQ ID (8)  |
| W 402      | Undefined organism found in <213> in SEQ ID (9)  |
| W 402      | Undefined organism found in <213> in SEQ ID (10) |
| W 402      | Undefined organism found in <213> in SEQ ID (11) |
| W 402      | Undefined organism found in <213> in SEQ ID (12) |
| W 402      | Undefined organism found in <213> in SEQ ID (13) |
| W 402      | Undefined organism found in <213> in SEQ ID (14) |
| W 402      | Undefined organism found in <213> in SEQ ID (15) |
| W 402      | Undefined organism found in <213> in SEQ ID (16) |
| W 402      | Undefined organism found in <213> in SEQ ID (17) |
| W 402      | Undefined organism found in <213> in SEQ ID (18) |
| W 402      | Undefined organism found in <213> in SEQ ID (19) |
| W 402      | Undefined organism found in <213> in SEQ ID (20) |

**Input Set:**

**Output Set:**

**Started:** 2008-08-04 11:53:26.021  
**Finished:** 2008-08-04 11:53:28.365  
**Elapsed:** 0 hr(s) 0 min(s) 2 sec(s) 344 ms  
**Total Warnings:** 34  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 34  
**Actual SeqID Count:** 34

Error code

Error Description

This error has occurred more than 20 times, will not be displayed

# SEQUENCE LISTING

<110> Feldmann, Richard J.

<120> Modifying the Control of Gene Expression Behavior by the Deletion  
of Connectrons and by the Design and Addition of Synthetic  
Connectrons in Prokaryotic, Archea and Eukaryotic Genomes

<130> FELD3002CIP1/ESS

<140> 10609383

<141> 2003-07-01

<150> US 09/866,925

<151> 2001-05-30

<150> US 60/393,558

<151> 2002-07-05

<160> 34

<170> PatentIn version 3.5

<210> 1

<211> 217

<212> DNA

<213> Saccharomyces cerevisiae complete genome

<220>

<221> misc\_feature

<222> (12572)..(12788)

<223> Chromosome = 1 Strand = positive Connectron Object Number = 36

<400> 1

gcactggtaa caggtggtaa tgaagaagta atttcctgac ttgttggtgt actggtaaca 60

ggtggtaatg atgaagtaat ttcctgactt gttgttgtag tggtaacagg tggtaatgaa 120

gaagtaattt cctgacttgt tgttgactg gtaacagggtg gtaatgatga agtaatttcc 180

tgacttggtt ttgtactggt aacagggtgt aatgatg 217

<210> 2

<211> 236

<212> DNA

<213> Saccharomyces cerevisiae complete genome

<220>

<221> misc\_feature

<222> (12572)..(12807)

<223> Chromosome = 1 Strand = positive Connectron Object Number = 39

<400> 2

```
gcactggtaa caggtggtaa tgaagaagta atttcctgac ttgttgttgt actggtaaca      60
gggtggtaatg atgaagtaat ttcctgactt gttgttgtac tggtaacagg tggtaatgaa    120
gaagtaattt cctgacttgt tgttgactg gtaacagggtg gtaatgatga agtaatttcc    180
tgacttggtt ttgtactggt aacagggtggt aatgatgaag cagtttcttg gcttgt      236
```

```
<210> 3
<211> 166
<212> DNA
<213> Saccharomyces cerevisiae complete genome
```

```
<220>
<221> misc_feature
<222> (24863)..(25028)
<223> Chromosome = 1 Strand = negative Connectron Object Number = 112
```

```
<400> 3
aatcaccaaa gtctacatat tcgtcttcat cattaccacc tgttaccagt gcaacaacaa      60
gtcaggaaat tactttcttca ttaccacctg ttaccactac aaaaacgagc gaacaaacca    120
ctttggttac cgtgacatcc tgcgaatctc atgtgtgcac tgaatc                    166
```

```
<210> 4
<211> 37
<212> DNA
<213> Escherichia coli k-12 MG1655 complete genome
```

```
<220>
<221> misc_feature
<222> (4626130)..(4626166)
<223> Chromosome = 1 Strand = positive Connectron Object Number =
4651a
```

```
<400> 4
tctgatgaca aacgccaaac tgctgatgc gctacgc                                37
```

```
<210> 5
<211> 54
<212> DNA
<213> Escherichia coli k12 MG1655 complete genome
```

```
<220>
<221> misc_feature
<222> (705150)..(705203)
<223> Chromosome = 1 Strand = negative Connectron Object Number =
811a
```

```
<400> 5
```

tctgatgaca aacgccaaac tgctgatgc gctacgctta tcaggcctac gcag 54

<210> 6  
<211> 36  
<212> DNA  
<213> Escherichia coli k12 MG1655 complete genome

<220>  
<221> misc\_feature  
<222> (757718)..(757753)  
<223> Chromosome = 1 Strand = negative Connectron Object Number = 975

<400> 6  
ttacgcctga tgcgctgcgc ttatcaggcc tacggg 36

<210> 7  
<211> 37  
<212> DNA  
<213> Escherichia coli k12 MG1655 complete genome

<220>  
<221> misc\_feature  
<222> (4626130)..(4626166)  
<223> Chromosome = 1 Strand = positive Connectron Object Number = 4651a

<400> 7  
tctgatgaca aacgccaaac tgctgatgc gctacgc 37

<210> 8  
<211> 54  
<212> DNA  
<213> Escherichia coli k12 MG1655 complete genome

<220>  
<221> misc\_feature  
<222> (698713)..(698766)  
<223> Chromosome = 1 Strand = negative Connectron Object Number = 809

<400> 8  
tctgatgaca aacgccaaac tgctgatgc gctacgctta tcaggcctac gcag 54

<210> 9  
<211> 36  
<212> DNA  
<213> Escherichia coli k12 MG1655 complete genome

<220>  
<221> misc\_feature

<222> (757718)..(757753)  
 <223> Chromosome = 1 Strand = negative Connectron Object Number = 975  
  
 <400> 9  
 ttacgcctga tgcgctgcgc ttatcaggcc tacggg 36  
  
 <210> 10  
 <211> 16  
 <212> DNA  
 <213> Saccharomyces cerevisiae complete genome - problem  
  
 <220>  
 <221> misc\_feature  
 <222> (221330)..(221345)  
 <223> Chromosome = 2 Strand = positive Connectron Object Number = 792a  
  
 <400> 10  
 tatatatatg tcactg 16  
  
 <210> 11  
 <211> 16  
 <212> DNA  
 <213> Saccharomyces cerevisiae complete genome - problem  
  
 <220>  
 <221> misc\_feature  
 <222> (221346)..(221361)  
 <223> Chromosome = 2 Strand = positive Connectron Object Number = 793  
  
 <400> 11  
 tattgcatgc tggatg 16  
  
 <210> 12  
 <211> 539  
 <212> DNA  
 <213> Saccharomyces cerevisiae complete genome - problem  
  
 <220>  
 <221> misc\_feature  
 <222> (448454)..(448992)  
 <223> Chromosome = 5 Strand = positive Connectron Object Number = 4749  
  
 <400> 12  
 tatatatatg tcactgtatt gcatgctgga tgggtgtaga caaggccgta gggacatata 60  
  
 gcatctagga agtaaccttg tacgaaaata ggcaatattt cctgtttagg cgattgtgac 120  
  
 gcagatttta gtccaacgat ctagcgtcaa ggaatttttt tatagtggga cattgcacca 180

|   |     |
|---|-----|
| aggaagtaac ttgatacgtc gtgggtgaat gggctctgtt tcttattcgg cggggtaata | 240 |
| catttttggg ggaagtttgt ctgtctgacg cgccatatgt aggtacgcca aaaagggtc  | 300 |
| ctctacttcg aagcgcgagg tcgtatacct aataaggaaa tgtaatttat aactttttat | 360 |
| tatattggtc ttttcgagag cggaacgtag gtccatgttt aaagtatcca agagaatatc | 420 |
| cacgaagcgg ctgagcaacg aacagaatcc tggttctcct cgactaagca gatagttaag | 480 |
| atactgtgca ccatggaaat tgaaaacgaa agtacgtacc gactacttta tttttgcag  | 539 |

<210> 13  
 <211> 158  
 <212> DNA  
 <213> *Saccharomyces cerevisiae* complete genome - problem

<220>  
 <221> misc\_feature  
 <222> (24863)..(25028)  
 <223> Chromosome = 5 Strand = negative Connectron Object Number = 4824a

|  |     |
|--|-----|
| <400> 13   |     |
| tatatatatg tcaactgtatt gcatgctgga tgggtgtaga caaggccgta gggacatata | 60  |
| gcatctagga agtaaccttg tacgaaaata ggcaatattt cctgttttagg cgattgtgac | 120 |
| gcagatttta gtccaacgat ctacgctcaa ggaatttt                          | 158 |

<210> 14  
 <211> 134  
 <212> DNA  
 <213> *Halobacterium* sp. NRC-1 complete genome

<220>  
 <221> misc\_feature  
 <222> (732401)..(732534)  
 <223> Chromosome = 1 Strand = positive Connectron Object Number = 6612

|   |     |
|---|-----|
| <400> 14  |     |
| ttcatcacag acgaggacga gcgcgggcaa gtgggggatcg gcacactcat cgtgttcac   | 60  |
| gcgatgggtgc tggtcgccgc gatcgccgcc ggcgctctca tcaaacactgc cggctacctc | 120 |
| caatccaagg ggtc   | 134 |

<210> 15  
 <211> 193  
 <212> DNA  
 <213> *Halobacterium* sp. NAC-1 complete genome



```

<220>
<221> misc_feature
<222> (733018)..(733209)
<223> Chromosome = 1 Strand = positive Connectron Object Number =
        6644a

<400> 15
gacgagcgcg gtcaagtggg gatcggcaca ctcatcggtg tcatcgcgat ggtgctggtc      60

gccgcgatcg ccgccggcgt cctcatcaac accgccggct acctccaatc caaggggtcg      120

gcaaccggtg aggaagcctc cgcacaggtc tccaaccgca tcaacatcgt ctccgcgtac      180

ggcaacgtca aca                                                                193

```

```

<210> 16
<211> 85
<212> DNA
<213> Halobacterium sp. NAC-1 complete genome

```

```

<220>
<221> misc_feature
<222> (773399)..(773483)
<223> Chromosome = 1 Strand = positive Connectron Object Number =
        6852

<400> 16
gtgggggatcg gcacgtcat cgtgttcacg gcgatgggtg tggtcgccgc gatcgccgcc      60

ggcgtcctca tcaacactgc cggt                                                                85

```

```

<210> 17
<211> 121
<212> DNA
<213> Pseudomonas aeruginosa PA01, complete genome

```

```

<220>
<221> misc_feature
<222> (4832718)..(4832838)
<223> Chromosome = 1 Strand = positive Connectron Object Number =
        53464

<400> 17
gccaacatcg aggcctcaa cagccgcacg gtgaacatcg gccagatcct cgaagtgatc      60

aagggcatct ccgagcagac caacctgctc gccctcaacg ccgccatcga agccgcgcgc      120

g                                                                121

```

```

<210> 18

```

```

<211> 194
<212> DNA
<213> Pseudomonas aeruginosa PA01, complete genome

<220>
<221> misc_feature
<222> (4836528)..(4836720)
<223> Chromosome = 1 Strand = positive Connectron Object Number =
53531

<400> 18
ggacggcaaa caggtggtcg agcagaccat ccgcgcgatg aacgagcttt ccgagaagat      60
cagcgctctc tgcgccaaca tcgaggccct caacagccgc acggtgaaca tcggccagat      120
cctcgaagtg atcaagggca tctccgagca gaccaacctg ctgcacctca acgccgccat      180
cgaagccgcg cgcg                                          194

<210> 19
<211> 169
<212> DNA
<213> Pseudomonas aeruginosa PA01, complete genome

<220>
<221> misc_feature
<222> (4838678)..(4838846)
<223> Chromosome = 1 Strand = positive Connectron Object Number =
53549a

<400> 19
accatccgcg cgatgaacga gctttccgag aagatcagcg ctcctgcgc caacatcgag      60
gccctcaaca gccgcacggt gaacatcggc cagatcctcg aagtgatcaa gggcatctcc      120
gagcagacca acctgctcgc cctcaacgcc gccatcgaag ccgcgcgcg      169

<210> 20
<211> 36
<212> DNA
<213> Sequence Recognized by Synthetic DNA Binding Protein

<400> 20
tccccatgag catagatatg caggtaggcg gcaagt      36

<210> 21
<211> 136
<212> DNA
<213> Vibrio cholerae chromosome I, complete chromosome

<220>

```

```

<221> misc_feature
<222> (952641)..(952777)
<223> Chromosome = 1 Strand = negative Connectron Object Number = 607

<400> 21
tgtatataacc caaactactt ggagttgcag gtagggcggca agtgagtgag tccccatgag 60
catagataga ctatgtgatt ggggtgaacg aacgtagcca acaccgctgc agcttcaagt 120
aggaagggtta tacctt 136

<210> 22
<211> 117
<212> DNA
<213> Vibrio cholerae chromosome I, complete chromosome

<220>
<221> misc_feature
<222> (1005810)..(1005926)
<223> Chromosome = 1 Strand = negative Connectron Object Number = 646

<400> 22
taccaaaact acttggagtt gcaggtaggc ggcaagagag tgaatcccca tcagcataga 60
cagactatgt gattgggggtg aacgaacgta gccaataaccg ctgcagcttc aagtagg 117

<210> 23
<211> 36
<212> DNA
<213> Sequence Recognized by Synthetic PNA

<400> 23
tccccatgag catagatatg caggtaggcg gcaagt 36

<210> 24
<211> 136
<212> DNA
<213> Vibrio cholerae chromosome I, complete chromosome

<220>
<221> misc_feature
<222> (952641)..(952777)
<223> Chromosome = 1 Strand = negative Connectron Object Number = 607

<400> 24
tgtatataacc caaactactt ggagttgcag gtagggcggca agtgagtgag tccccatgag 60
catagataga ctatgtgatt ggggtgaacg aacgtagcca acaccgctgc agcttcaagt 120
aggaagggtta tacctt 136

```

<210> 25  
 <211> 117  
 <212> DNA  
 <213> *Vibrio cholerae* chromosome I, complete chromosome

<220>  
 <221> misc\_feature  
 <222> (1005810)..(1005926)  
 <223> Chromosome = 1 Strand = negative Connectron Object Number = 646

<400> 25  
 taccaaaact acttgagatt gcaggtaggc ggcaagagag tgaatcccca tcagcataga 60  
 cagactatgt gattgggggtg aacgaacgta gccaataccg ctgcagcttc aagtagg 117

<210> 26  
 <211> 15  
 <212> DNA  
 <213> Sequence Recognized by Synthetic Linked Pair of DNA Binding Objects

<400> 26  
 cccgacacaa cctgc 15

<210> 27  
 <211> 15  
 <212> DNA  
 <213> Sequence Recognized by Synthetic Linked Pair of DNA Binding Objects

<400> 27  
 cccgggggttc ccgag 15

<210> 28  
 <211> 64  
 <212> DNA  
 <213> *Aeropyrum pernix* k1 complete genome

<220>  
 <221> misc\_feature  
 <222> (284008)..(284070)  
 <223> Chromosome = 1 Strand = negative Connectron Object Number = 218

<400> 28  
 cccagccgtg cccgacacaa cctgccataa tttgttacat gaaggcacgg tttgggtgaa 60  
 cggc 64

<210> 29  
 <211> 163  
 <212> DNA  
 <213> *Aeropyrum pernix* k1 complete genome

<220>  
 <221> misc\_feature  
 <222> (326716)..(326878)  
 <223> Chromosome = 1 Strand = negative Connectron Object Number = 295

<400> 29  
 ataaatctaa cccggtgacc ccgggggttcc cgagggaagc cccaggggc ttccgtaggc 60  
 ggccccgggg agaccgtgat gaaccagacc gtgccccgaca caacctgcta taatttgta 120  
 catgaaggca cggtttgggt gaacggctca taatcctctc gat 163

<210> 30  
 <211> 14  
 <212> DNA  
 <213> Synthetic Sequence

<400> 30  
 tagaggagta ccac 14

<210> 31  
 <211> 14  
 <212> DNA  
 <213> Synthetic Sequence

<400> 31  
 atctcctcat ggtg 14

<210> 32  
 <211> 14  
 <212> RNA  
 <213> Synthetic Sequence

<400> 32  
 uagaggagua ccac 14

<210> 33  
 <211> 14  
 <212> RNA  
 <213> Synthetic Sequence

<400> 33  
 gugguacucc ucuu 14

<210> 34  
 <211> 14  
 <212> RNA  
 <213> Synthetic Sequence

<400> 34  
 aucuccuau ggug 14

